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AFSC 1A1X1
Flight Engineer

CAREER FIELD EDUCATION AND TRAINING PLAN (CFETP)

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CAREER FIELD EDUCATION AND TRAINING PLAN

Flight Engineer

AFSC 1A1X1

PART I

Preface

1. This Career Field Education and Training Plan (CFETP) is a comprehensive education and training document that identifies life-cycle education/training requirements, training support resources, and minimum core task requirements for this specialty. The CFETP will provide personnel a clear career path to success and instill rigor in all aspects of career field training.

2. The CFETP consists of two parts; both of which are used by management to plan, manage, and control training within the career field.

2.1. Part I provides information necessary for overall management of the specialty. Section A explains how everyone will use the plan; Section B identifies career progression information, duties and responsibilities, training strategies, and career field path; Section C associates each level with specialty qualifications (knowledge, education, training, and other); Section D indicates resource constraints. Some examples are funds, manpower, equipment, and facilities. Note: *Air Force Enlisted Classification Directory* (Formally known as AFMAN 36-2108*),* contains the specialty descriptions.

2.2. Part II includes the following: Section A identifies the Specialty Training Standard (STS) and includes duties, tasks, technical references to support training, Air Education and Training Command (AETC) conducted training and correspondence course requirements. Section B contains the course objective list and training standards supervisors will use to determine if airmen satisfied training requirements. Section C identifies available training support materials. Section D identifies a training course index that is used to determine resources available to support training. Included here are both mandatory and optional courses. Section E identifies MAJCOM unique training requirements.

3. This CFETP is designed to ensure individuals in AFSC 1A1X1 receive comprehensive and effective training at the appropriate phases of their career. At unit level, supervisors and trainers use Part II to identify, plan, and conduct training commensurate with the overall goals of this plan.

ABBREVIATIONS/TERMS EXPLAINED

Advanced Training (AT). Formal course which provides individuals who are qualified in one or more positions of their Air Force Specialty (AFS) with additional skills/knowledge to enhance their expertise in the career field. Training is for selected career airmen at the advanced level of the AFS.

Aircrew Fundamentals Course (AFC). A course designed to screen candidates for the rigors of enlisted aircrew duties prior to spending expensive follow-on training resources.

Aircrew Training System (ATS). A system wherein a civilian contractor provides academic, simulator, and other designated aircrew training. ATS courses are listed in the applicable AFI 11-2MDS-Specific, Volume 1.

Airframe and Power Plant License (A&P). A license awarded by the Federal Aviation Administration (FAA) requiring testing and practical application.

Air Force Career Field Manager (AFCFM). Individual appointed by Air Staff Deputy Chief of Staff to manage education, training, and resources for a specific career field(s).

Basic Aircraft Qualification (BAQ). An aircrew member who has satisfactorily completed initial qualification training and is qualified to perform aircrew duties in the unit aircraft.

Basic Flight Engineer (BFE) Course. Non-flying course designed to cover the fundamentals and applications of basic flight engineering duties and responsibilities.

Basic Mission Capable (BMC). An aircrew member who has satisfactorily completed mission qualification training, does not maintain MR/CMR status, but maintains familiarization in the command or unit operational mission.

Career Development Course (CDC). A self-paced course designed to upgrade to a skill level and provide the information necessary to satisfy the career knowledge component of OJT. They contain information on basic principles, techniques, and procedures common to an AFSC.

Career Enlisted Aviator (CEA). An individual with a primary AFSC of 1AXXX (Aircrew Operations).

Career Enlisted Aviator Center of Excellence (CEA CoE). The cornerstone of all career enlisted aviator training, conducted at Lackland AFB, TX. Provides undergraduate, initial skills training through award of the 3-skill level, and advanced training courses including aircrew management, flight instructor and evaluator academics, and Operations Group superintendent orientation.

Career Field Education and Training Plan (CFETP). A CFETP is a comprehensive, multipurpose document encapsulating the entire spectrum of training for a specialty. It outlines a logical growth path, including training resources, and is designed to eliminate duplication and make training identifiable and budget defensible.

Combat Mission Ready (CMR). An aircrew member who has satisfactorily completed mission qualification training and maintains qualification and proficiency in the command or unit combat mission.

Continuation Training (CT). Training for aircrew members already qualified in their respective aircrew position to maintain their assigned level of proficiency. CT is designed to progressively improve basic aircraft qualification, combat mission ready, basic mission capable, and aircrew members' ability to perform the unit's mission.

Course Objective Lists (COL). A publication, derived from the initial skills course training standard, identifying the tasks and knowledge requirements, and respective standards provided to achieve a 3-skill level in this career field. Supervisors use the COL to conduct graduate evaluations in accordance with AFI 36-2201, Volume 3, Air Force Training Program On-the-Job Training Administration.

Course Training Standard (CTS). A training standard identifying the training members will receive in a specific course.

Crew Resource Management (CRM). The effective use of all available resources—people, weapon systems, facilities and equipment, and environment—by individuals or crews to safely and efficiently accomplish an assigned mission or task. The term "CRM" is used to refer to the training program, objectives, and key skills directed to this end.

Enlisted Specialty Training (EST). A mix of formal training (technical school) and informal training (on-the-job) to qualify and upgrade airmen in each skill-level of a specialty.

Evaluator Flight Engineer (EFE). An instructor qualified flight engineer selected from the most highly qualified and experienced instructors and designated in writing by the OG/CC or SQ/CC designated to administer evaluations.

Exportable Training. Additional training via computer assisted, paper text, interactive video, or other necessary means to supplement training.

Federal Aviation Administration (FAA). Federal agency designed to monitor, approve, and qualify all aspects of the aircraft industry.

First Flight Engineer. An engineer fully qualified to perform flight engineer duties.

Initial Qualification Training (IQT). Training necessary to initially qualify a crewmember in a basic crew position and flying duties without regard to the unit's operational mission. This is the minimum requirement for BAQ.

Initial Skills Training. A formal school course that results in award of a 3-skill level AFSC.

Instructional System Development (ISD). A deliberate and orderly, but flexible process for planning, developing, validating, implementing, and reviewing instructional programs. It ensures personnel are taught, in a cost efficient way, the knowledge and skills for successful job performance.

Input/Feeder AFSC. An AFSC containing the basic skills required for successful entry in AFSC 1A1X1.

Instructor Flight Engineer. A flight engineer authorized to instruct on those missions for which qualified.

Lead Command. They establish standards, tasks, and formal training requirements for both operations and maintenance, and are responsible for updating training requirements and coordinating changes to the CFETP.

MAJCOM Functional Manager (MFM). Primary focal point and liaison between the MAJCOM and HQ USAF on all matters relating to the aircrew career fields and aviation resource management within the command. This includes, but is not limited to, responsibility for the aircrew training programs, coordination on aircrew resource allocations, and managing education, training, and resources for a specific career field(s) for that MAJCOM.

Major Weapons Systems (MWS). For the purpose of this CFETP, MWS consists of all applicable airborne platforms with a crew complement including at least one 1A1X1.

Mission Capable (MC). Status of an aircrew member who has satisfactorily completed mission qualification training but who does not maintain mission ready status.

Mission Design Series (MDS). A term used to identify a specific aircraft designation (e.g., AC-130, E-3B).

Mission Ready (MR). An aircrew member who has satisfactorily completed mission qualification training and maintains qualification and proficiency in the command or unit operational mission.

Mission Qualification Training (MQT). Training necessary to qualify a crewmember in a specific aircrew position to perform the command's or unit's operational mission. MQT completion is a prerequisite for mission ready status.

On-the-Job Training (OJT). A delivery method used to certify personnel in both upgrade (skill level award) and job qualification (duty position certification) training. It is hands-on, over-the-shoulder training conducted at the duty location.

Practicum. A means of receiving college credits through Community College of the Air Force (CCAF) Teaching Technology Associates Degree Program for formal schoolhouse instructors. It covers a wide variety of subjects beyond initial instructor qualification.

Qualification Training (QT). Actual hands-on task performance training designed to qualify an aircrew member in a specific duty position. This training program occurs both during and after the upgrade training process. It is designed to provide the performance skill/knowledge training required to do a job.

Resource Constraints. Resource deficiencies, such as money, facilities, time, manpower, and equipment that preclude desired training from being accomplished.

Retraining. An Air Force objective to balance the career force of each AFSC as needed. The retraining program allows individual Airmen a choice of career fields from which to pursue an Air Force career and provides a method to return Airmen disqualified from their current AFSC to a productive status.

Second Flight Engineer. An engineer qualified to perform limited engineer duties.

Specialty Training Standard (STS). An Air Force publication that describes an Air Force Specialty in terms of tasks and knowledge, which an airman in that specialty may be expected to perform or to know on the job. It further serves as a contract between AETC and the functional user. It shows which of the overall training requirements for an AFSC are taught in formal schools and exportable courses.

Standard. An exact value, a physical entity, or an abstract concept, established and defined by authority, custom, or common consent to serve as a reference, model, or rule in measuring quantities or qualities, establishing practices or procedures, or evaluating results. A fixed quantity or quality.

Tanker Airlift Control Center (TACC). The 618th TACC at Scott AFB is the largest functional Air Operations Center for the highest level in the AMC C2 system providing centralized command and control of AMC assigned, operated, and gained forces. This agency serves as the central execution/planning agency for determining and tasking all AMC operational and mission requirements. The 618th TACC is a direct reporting unit to 18th AF.

Total Force. All collective Air Force components (active, reserve, guard, and civilian elements) of the United States Air Force.

Upgrade Training (UGT). Training that leads to the award of a higher skill level in an Air Force Specialty.

Utilization and Training Workshop (U&TW). A forum consisting of the AFCFM, MAJCOM functional managers (MFM), Subject Matter Experts (SME), and AETC training personnel who determines career field training requirements.

Weapons System Training Package (WSTP). An instructional course which includes IQT, MQT, and CT designed for use at the unit to qualify or aid qualification in a duty position, program, or on a piece of equipment. The WSTP may be printed, computer based, flying, simulator, or other audiovisual material.

Section A - General Information

1. Purpose. This CFETP provides information necessary for the Air Force Career Field Manager (AFCFM), MAJCOM functional managers (MFMs), commanders, training managers, supervisors, and trainers to plan, develop, manage, and conduct an effective and efficient career field training program. The plan outlines the training that individuals must receive in order to develop and progress throughout their career. For the purpose of this plan, training is divided into four areas: initial skills, upgrade training (UGT), qualification training (QT), and continuation training (CT). Initial skills training is the Air Force Specialty specific training an individual receives upon entry into the Air Force or upon retraining into this specialty for award of the 3-skill level. Upgrade training identifies the mandatory courses, task qualification requirements, and correspondence course completion required for award of the 5-, 7-, and 9-skill levels. Qualification training is actual hands-on task performance training designed to qualify an airman in a specific duty position. This training program occurs both during and after the upgrade training process. It is designed to provide the performance skills/knowledge training required for the job. Continuation training is additional training either in-residence or exportable advanced training courses, or on-the-job training, provided to personnel to maintain their skills and knowledge beyond the minimum required. The CFETP has several purposes, some are:

1.1. Serves as a management tool to plan, manage, conduct, and evaluate a career field training program. Also, it is used to help supervisors identify training at the appropriate point in an individual's career.

1.2. Identifies task and knowledge training requirements for each skill level in this specialty and recommends training and education throughout each phase of an individual's career.

1.3. Lists training courses available in the specialty, identifies sources of training, and the training medium.

1.4. Identifies major resource constraints that impact full implementation of the desired specialty training program.

2. Uses. The plan will be used by MFMs and supervisors at all levels to ensure comprehensive and cohesive training programs are available and/or instituted for each individual in the specialty.

2.1. Training personnel will develop and revise formal resident, non-resident, and exportable training based on requirements established by the user and documented in Part II of the CFETP. The lead command MFM will work with the AFCFM to develop acquisition strategies for obtaining resources needed to provide the identified training.

2.2. MFMs will ensure their training programs complement the CFETP mandatory initial and upgrade skills requirements. Identified requirements can be satisfied by OJT, resident training, contract training, or exportable courses. MAJCOM-developed training to support this AFSC must be identified for inclusion in this plan and must not duplicate available training resources.

2.3. Each individual will complete the mandatory training requirements specified in this plan. The list of courses in Part II will be used as a reference to support training.

2.4. Personnel in AFSC 1A1X1 are exempt from maintaining OJT Training Folders (AF Form 623). That training is certified via AF Form 8 by trained evaluators. Certification of the AF Form 8 eliminates the requirement to document STS items in this CFETP.

3. Coordination and Approval. The AFCFM is approval authority. Also, the AFCFM will initiate an annual review of this document to ensure currency and accuracy. MAJCOM functional managers and AETC training managers will identify and coordinate on the career field training requirements. Using the list of courses in Part II, they will eliminate duplicate training. Send applicable inputs/changes to this CFETP through MAJCOM functional managers to HQ USAF/A3O-AT, 1480 Air Force Pentagon, Washington D.C. 20330-1480.

Section B - Career Progression and Information

4. Specialty Description

4.1. **Specialty Summary.** Performs aircraft visual inspections and in-flight duties. Operates and monitors engine and aircraft systems controls, panels, indicators, and devices. Manages flight engineer functions and activities. Related DoD Occupational Subgroup: 050.

4.2. Duties and Responsibilities.

4.2.1. Performs aircraft inspections. Performs aircrew visual inspection; non-scheduled aircraft maintenance; and pre-flight, through-flight, and post-flight inspections of aircraft away from home station. Maintains aircraft forms and records during flight and while aircraft is away from home station.

4.2.2. Computes and applies aircraft weight, balance, and performance data. Determines and verifies passenger, cargo, fuel, and emergency and special equipment distribution and weight. Computes aircraft weight and balance to ensure specified limits are maintained. Computes takeoff, climb, cruise, and landing data. Determines engine fuel consumption using airspeed, atmospheric data, charts, computer, or electronic calculator. Records actual aircraft performance data in flight engineer's log.

4.2.3. Operates and monitors engine and aircraft systems controls and indicators. Assists pilot or performs engine starts, and monitors run-up, flight operations, and engine shutdown. Operates engine controls to provide desired efficiency and economy. Monitors engine instruments throughout period of operation. Controls, monitors, and regulates aircraft systems such as electric, communication, navigation, hydraulic, pneudraulic, fuel, air conditioning, and pressurization; ventilation; auxiliary power unit; and lubrication systems. Observes warning indicators and light for fire, overheat, depressurization, and system failure. Reports abnormal conditions to pilot, and recommends corrective action. Performs duties as gunner, hoist operator, and cargo sling operator.

4.2.4. Plans and organizes flight engineer activities. Organizes flight engineering standardization, qualification, and other requirements flight engineer logs, reports, and records for accuracy, completeness, format, and compliance with current directives. Operates and monitors navigation equipment, radar, and radios when navigator is not on the aircraft. Coordinates with other agencies and organizations to conduct flight engineer activities.

4.2.5. Directs flight engineer activities. Administers qualification flight to personnel engaged in flight engineer activities within flight test and operations organizations. Directs standardization of flight engineer performance in conjunction with aircraft performance engineering, engine conditioning, and preventive maintenance programs. Ensures conformance with prescribed aircrew procedures.

4.2.6. Inspects and evaluates flight engineer activities. Evaluates individual and group performance in terms of effectiveness and qualification in using equipment and materials. Interprets and discusses evaluation findings, and recommends action to correct deficiencies.

4.2.7. Performs technical flight engineer functions. Resolves technical problems encountered by operating units. Renders advice and technical assistance to agencies engaged in functions associated with flight engineer activities. Advises organizational commander or staff agencies on status of flight engineer activities and adequacy of equipment. Maintains qualification in aircraft.

5. **Skill/Career Progression.** Adequate training and timely progression from the apprentice to the superintendent skill level play an extremely important role in the Air Force's ability to accomplish its mission. Therefore, it is essential that everyone involved in training do their part to plan, develop, manage, conduct, and evaluate an effective and efficient training program. The guidance provided in this part of the CFETP will ensure individuals receive viable training at the appropriate points in their career. The following narrative and the AFSC 1A1X1 career field flow charts identify the training career path. They define the training required in an individual's career.

5.1. **Apprentice 3-Level.** Completion of the Aircrew Fundamentals Course (L3AQR1A111) at Lackland AFB, TX is mandatory for pipeline and non-aviation service cross training students. The Basic Flight Engineer (BFE) course (L3ABR1A131) at Lackland AFB, TX is mandatory for award of the 3-skill level AFSC. Initial skills training requirements are identified and revised (if necessary) annually during the 1A1X1 Utilization and Training Workshop (U&TW). Task and knowledge requirements are identified in the STS, Part II, Sections A and B. Individuals must complete an initial skills course to be awarded AFSC 1A131.

5.2. **Journeyman 5-Level.** Upgrade training to the 5-skill level in this specialty consists of tasks and knowledge training provided in Career Development Course (CDC) 1A151 and minimum 15 months UGT. Individuals in retraining status are subject to the same training requirements and a minimum 9 months in UGT.

5.3. **Craftsman 7-Level.** Upgrade training to the 7-skill level in this specialty consists of holding at least the grade of SSgt and 12 months of experience. Individuals in retraining status are subject to the same training requirements and a minimum 6 months in UGT.

5.4. **Superintendent 9-Level.** Upgrade training to the 9-skill level in this specialty consists of holding the grade of SMSgt, meeting mandatory requirements listed in AFECD and AFI 36-2101, and having supervisor's recommendation.

5.5. **Chief Enlisted Manager (CEM).** CEM code is awarded upon promotion to Chief Master Sergeant.

6. Training Decisions. The CFETP uses a building block approach (simple to complex) to encompass the entire spectrum of training requirements for the Flight Engineer career field. This CFETP was developed to include life-cycle (day one through retirement) training requirements for this specialty. The spectrum includes a strategy for when, where, and how to meet the training requirements. The strategy must be apparent and affordable to reduce duplication of training and eliminate a disjointed approach to training. The following training decisions were made at the career field Utilization and Training Workshop held at the Career Enlisted Aviator Center of Excellence, Lackland AFB, TX in March 2007.

6.1. **Initial Skills Training.** Significant changes were made in initial skills training. The STS was changed to include Aircrew Fundamentals Course to align common core training amongst all 1AXXX AFSCs.

6.2. **Five Level Upgrade Training.** The Aircrew Fundamentals, 1AX5X, CDC was added as a pre-requisite volume prior to starting the AFSC 1A151 CDC. Completion of all CDC sets provides required training for upgrade in the Flight Engineer related position.

6.3. **Seven Level Upgrade Training.** No formal changes. The CSAF has approved a variance, eliminating the requirement for in-residence 7-level training for all 1AXXX (Aircrew Operations Career Field) personnel.

7. Community College of the Air Force (CCAF) Academic Programs. CCAF provides the opportunity to obtain an Associate in Applied Sciences (AAS) Degree. Enrollment in CCAF occurs upon completion of basic military training. Off-duty education is a personal choice but is highly encouraged. In order to receive Senior Rater Endorsement on the EPR, individuals will obtain a CCAF degree and complete requisite PME. See the CCAF web site for program details regarding the AAS degree at: http://www.au.af.mil/au/ccaf . Additionally, see the Air Force Virtual Education Center website regarding AAS degree progress at: https://my.af.mil/afvecprod/. In addition to its associate degree program, CCAF offers the following:

7.1. **Occupational Instructor Certification.** The College offers the Occupational Instructor Certification to instructors teaching full time in a CCAF affiliated school. To qualify, instructors must complete an instructor course, a Teaching Practicum, have two years teaching experience, hold an associate or higher degree, and be recommended by their commander/commandant.

7.2. **Instructor of Technology & Military Science Degree.** This program is offered to enlisted members who are assigned to CCAF affiliated schools teaching CCAF degree-applicable courses. Applicants must complete three semester hours of CCAF-approved instructor methodology coursework and hold their career-field-related CCAF degree or equivalent civilian college degree before registration.

7.3. **Trade Skill Certification.** When a CCAF student separates or retires, a trade skill certification is awarded for the primary occupational specialty. The College uses a competency based assessment process for trade skill certification at one of four proficiency levels: Apprentice, Journeyman, Craftsman/Supervisor, or Master Craftsman/Manager. All are transcribed on the CCAF transcript.

7.4. **Degree Requirements.** All airmen are automatically entered into the CCAF program. The current program associates degree available from the CCAF for AFSC 1A1X1 is the Aviation Operations (4VCB) degree. Prior to completing an associate degree, the 5-skill level must be awarded and the following requirements must be met:

Subject Area	**Semester Hrs**
Technical Education	24
Leadership, Management, and Military Studies	6
Physical Education	4
General Education	15
Program Elective	15
Total	**64**

7.4.1. **Technical Education (24 Semester Hours):** Twenty-four semester hours are required to fulfill the technical education requirement. A minimum of 12 semester hours of technical core subjects or courses must be applied and the remaining semester hours applied from technical core or technical elective subjects or courses. Requests to substitute comparable courses or to exceed specified semester hour values in any subject or course must be approved in advance by the Technical Branch at CCAF.

7.4.1.1. **Technical Core (12-24 Semester Hours):**

Subjects/Course	Max Semester Hrs
Flight Engineer	24
Air Transportation Principles	6
Aviation/Flight Safety	6
CCAF Internship	18
Flight Rules and Regulations	3
Introduction to Aviation/Aeronautics	3
Survival Training	6

7.4.1.2. **Technical Electives (0-12 Semester Hours):**

Subjects/Course	Max Semester Hrs
Advanced Flight Engineering	12
Aerodynamics	3
Aircraft Systems	6
Aircraft Weight and Balance	3
Aviation Law	6
Climatology/Meteorology	6
Computer Science	6
Electricity/Electronics	6
FAA Airframe and Powerplant Certification	6
General Chemistry/Algebra-Based Physics	4
Human Factors in Aviation/Flight Physiology	3
Human Relations	3
Private/Commercial Pilot's License	3

7.4.2. **Leadership, Management, and Military Studies (6 Semester Hours):** The leadership, management and military studies (LMMS) requirement may be satisfied by applying professional military education, civilian courses accepted in transfer and/or by testing credit. However, the preferred method of completing leadership, management and military studies is through attending an airman leadership school, the NCO academy and/or the Air Force Senior NCO Academy.

7.4.3. **Physical Education (4 Semester Hours):** Completing basic military training satisfies the 4-semester-hour physical education requirement. Civilian courses do not apply to this requirement.

7.4.4. **General Education (15 Semester Hours):** Applicable courses must meet the criteria for application of courses to the General Education Requirement (GER) and be in agreement with the definitions of applicable General Education subject/courses as provided in the CCAF general catalog.

Subjects/Course	Semester Hrs
Oral Communication (speech)	3
Written Communication (English composition)	3
Mathematics (intermediate algebra or college-level mathematics)	3
Social Science (anthropology, archaeology, economics, geography, government, history, political science, psychology, sociology)	3
Humanities [courses in fine arts (criticism, appreciation, historical significance), foreign language, literature, philosophy, religion]	3

7.4.5. **Program Elective (15 Semester Hours):** Satisfied with applicable Technical Education, Leadership, Management, and Military Studies or General Education subjects/courses.

7.5. Additional off-duty education is a personal choice that is encouraged for all. Individuals desiring to become an Air Education and Training Command Instructor should be actively pursuing an associate's degree. A degreed faculty is necessary to maintain accreditation through the Southern Association of Colleges and Schools.

8. Career Field Flow Charts.

Figure 1. Career Enlisted Education and Training Path

Figure 2. Flight Engineer Career Path 1 of 4

Figure 3. Flight Engineer Career Path 2 of 4

Figure 4. Flight Engineer Career Path 3 of 4

Figure 5. Flight Engineer Career Path 4 of 4

Figure 6. 1A1X1 Assignment Locations

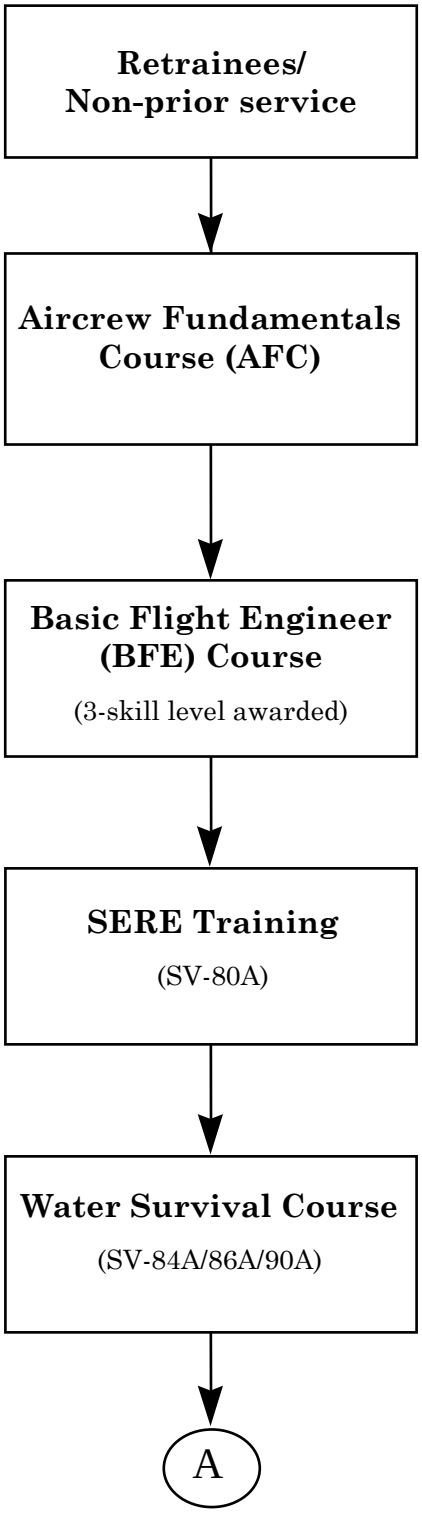
NOTE: The flow outlined in the figures on the next page represents the formal training courses required for personnel entering and becoming fully qualified in the Flight Engineer Specialty. The locations, course lengths, and titles are subject to change. Changes will be updated in the Education Training Course Announcement (ETCA) by the course owner.

Personnel graduating from the Basic Flight Engineer course are awarded AFSC 1A131 and are authorized to wear the Basic Aircrew Member Badge. Wear and permanent awarding requirements of the Basic Aircrew Member Badge will be IAW AFI 11-402 and MAJCOM supplements. Failure to complete IQT is authority for supervisors to recommend revocation of wear of the aircrew member badge.

Figure 1. Enlisted Education and Training Path					
	GRADE REQUIREMENTS				
Education and Training Requirements	Rank	Earliest Sew-on	Air Force Average	1A1X1 Average	High Year of Tenure (HYT)
Basic Military Training School (BMTS)	AB				
Apprentice Technical School (3-Skill Level)	Amn	6 months			
Upgrade To Journeyman (5-Skill Level) - Minimum 15 months on-the-job training - Minimum 9 months on-the-job training for retrainees - Complete appropriate CDC	A1C SrA	16 months 28 months	3 years	3 years	12 years
Airman Leadership School (ALS) - Must be a SrA with 48 months time in service or be a SSgt selectee (ARC: Must be a SrA with 42 months time in service to accomplish ALS by correspondence) - Resident graduation is a prerequisite for SSgt sew-on (Active Duty Only)					
Upgrade To Craftsman (7-Skill Level) - Minimum rank of SSgt - 12 months OJT - 6 months OJT for retrainees	SSgt	3 years	4.6 years	5.8 years	20 years
Noncommissioned Officer Academy (NCOA) - Must be a TSgt or TSgt selectee - Resident graduation is a prerequisite for MSgt sew-on (Active Duty Only) - Resident or correspondence graduation is a prerequisite for MSgt sew-on (ARC Only)	TSgt	5 years	10.8 years	12.5 years	24 years
USAF Senior NCO Academy (SNCOA) - Must be a CMSgt selectee, SMSgt, SMSgt selectee, or a MSgt selected to attend - Resident graduation is a prerequisite for CMSgt sew-on (Active Duty Only) - Resident or correspondence graduation is a prerequisite for SMSgt sew-on (ARC Only)	MSgt	8 years	17 years	17 years	26 years
Upgrade to Superintendent (9-Skill level) - Minimum rank of SMSgt.	SMSgt	11 years	20.5 years	21 years	28 years
Chief Enlisted Manager (CEM) - Minimum rank of CMSgt - Completed SNCO Academy (Active Duty Only) - Chief Leadership Course (CLC)	CMSgt	14 years	22.8 years	24.1 years	30 years
Data current as of April 2007					

Figure 1

Flight Engineer Career Path 1 of 4



* Note: The survival courses may be performed out-of-sequence to allow for scheduling flexibility. This training must be completed prior to qualified/certified as mission ready.

Figure 2

Flight Engineer Career Path 2 of 4

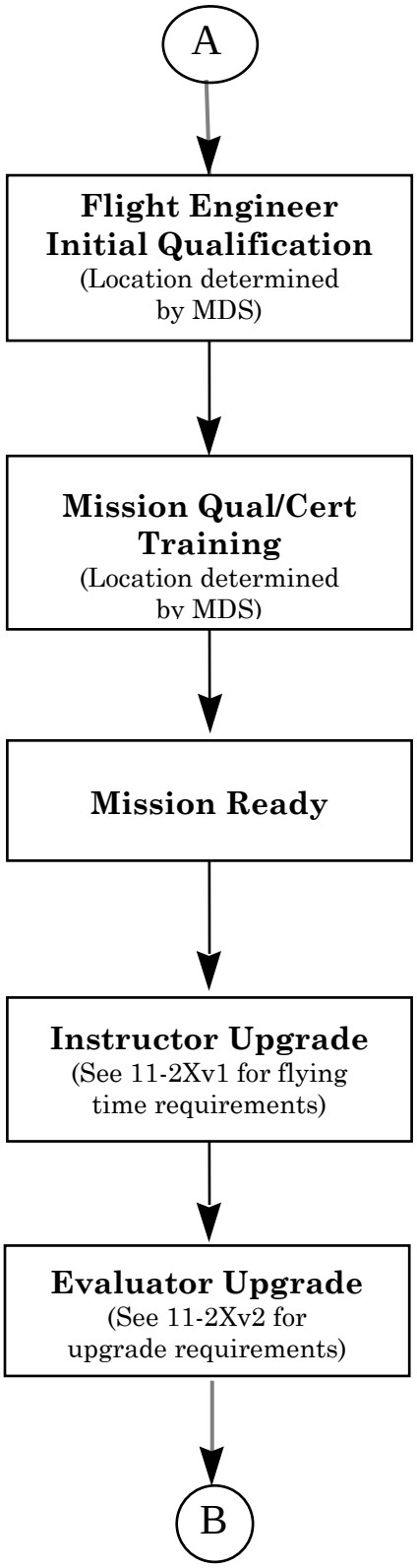


Figure 3

Flight Engineer Career Path 3 of 4

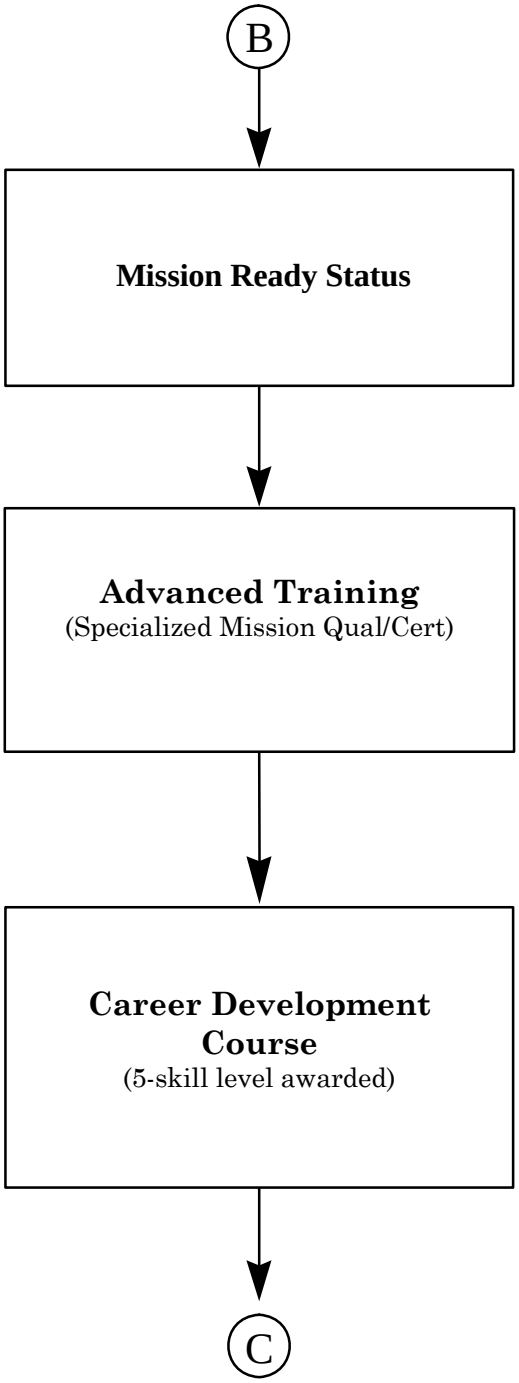


Figure 4

Flight Engineer Career Path 4 of 4

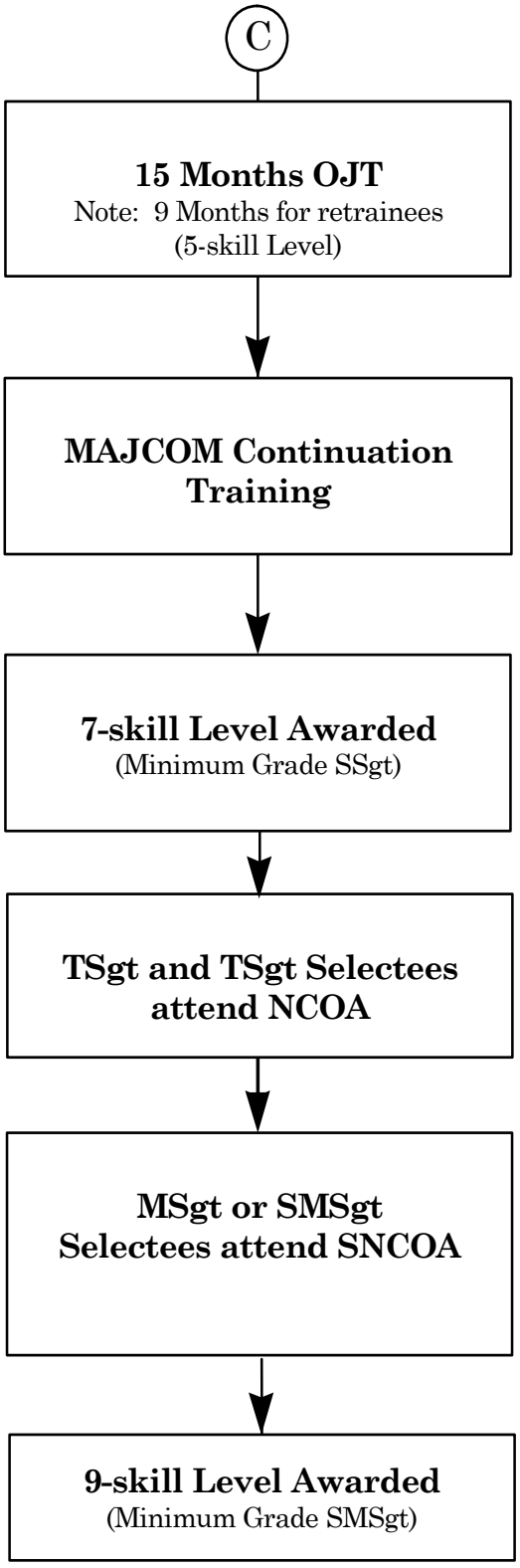


Figure 5

1A1X1 Assignment Locations

Flight Engineer Assignment Locations							
	A1C	**SRA**	**SSG**	**TSG**	**MSG**	**SMS**	**CMS**
Base							
Andrews AFB, MD		X	X	X	X	X	X
Barksdale AFB, LA						X	
Davis-Monthan AFB, AZ		X	X	X	X	X	X
Dover AFB, DE		X	X	X	X	X	X
Dyess AFB, TX		X	X	X	X	X	X
Edwards AFB, CA			X	X	X		
Eglin AFB, FL		X	X	X	X	X	X
Hurlburt Field, FL		X	X	X	X	X	X
Elmendorf AFB, AK	X		X	X	X		
Fairchild AFB, WA		X	X	X			
F.E. Warren AFB, WY		X	X	X	X	X	
Geilenkirchen, Germany			X	X	X	X	X
Hickam AFB, HI			X	X	X		
Kadena AFB, Japan		X	X	X	X	X	
Kirtland AFB, NM		X	X	X	X	X	
Lackland AFB, TX		X	X	X	X		
Lakenheath, UK		X	X	X	X		
Little Rock AFB, AR		X	X	X	X	X	
Langley AFB, VA						X	X
MacDill AFB, FL		X	X	X	X	X	
Malmstrom AFB, MT		X	X	X	X		
Mildenhall, UK		X	X	X	X	X	X
McGuire AFB, NJ		X	X	X	X	X	X
Melbourne, FL				X			
Minot AFB, ND		X	X	X	X		
Moody AFB, GA		X	X	X	X	X	
Nellis AFB, NV		X	X	X	X	X	
Offutt AFB, NE			X	X	X		
Osan AB, Korea				X			
Pentagon					X		X
Pope AFB, NC		X	X	X	X	X	
Ramstein AB, Germany		X	X	X	X	X	
Randolph AFB, TX				X	X	X	X
Robins AFB, GA		X	X	X	X	X	X
Scott AFB, IL				X	X	X	X
Tinker AFB, OK		X	X	X	X	X	X
Travis AFB, CA		X	X	X	X	X	X
Vandenberg AFB, CA		X	X	X	X		
Wright-Patterson AFB, OH				X			
Yokota AB, Japan		X	X	X	X		

Figure 6

NOTE: The assignment authorizations listed on the previous page are subject to change without notice. Crewmembers interested in assignments to locations listed should consult their MAJCOM functional manager or the AFPC resource manager for more detailed information about requirements for a specific location.

Section C - Skill Level Training Requirements

9. Purpose. Skill level training requirements in this career field are defined in terms of task and knowledge requirements. This section outlines the specialty qualification requirements for each skill level in broad, general terms and establishes the mandatory requirements for entry, award, and retention of each skill level. The specific task and knowledge training requirements are identified in the STS and the Course Objective List at Part II, Section A and B of this CFETP.

10. Specialty Qualifications:

10.1. Apprentice Level Training:

10.1.1. **Specialty Qualification.**

10.1.1.1. **Knowledge.** Knowledge is mandatory of: electrical, communications, navigation, mechanical, hydraulic, and pneumatic systems applying to aircraft and related systems; flight theory; minor in-flight maintenance; personal equipment and oxygen use; aircraft emergency procedures; and using and interpreting diagrams, schematics, aircraft performance charts, loading charts, technical publications, and flight manuals.

10.1.1.2. **Education.** For entry into this specialty, completion of high school with courses in physics, computer principles, mathematics, typing, speech, and English is desirable.

10.1.1.3. **Training.** Completion of the Aircrew Fundamental Course (L3AQR1A111) at Lackland AFB, TX is mandatory for pipeline and non-aviation service cross training students. Completion of the Basic Flight Engineer course (L3ABR1A331) at Lackland AFB, TX is mandatory for award of the 3-skill level AFSC.

10.1.1.4. **Other.** The following are mandatory as indicated:

10.1.1.4.1. For entry into 1A1X1 specialty, prior qualification at the 5- or 7-skill level in the 1A0, 1A2, 1A5, 2A3X1/3, 2A4X1/2, 2A5, 2AX1/3/4/5/6, 2A7X3, and 2M0 career field ladder, or possession of a valid Federal Aviation Administration (FAA) Flight Engineer certificate with a jet or turboprop rating, Private Pilot's License, or valid FAA airframe and power plant (A&P)license and/or Aircraft Maintenance Technician (AMT).

10.1.1.4.2. For entry into this specialty, normal color vision and depth perception as defined in AFI 48-123, *Medical Examination and Standard*.

10.1.1.4.3. For entry, award, and retention of this AFSC, physical qualification for aircrew duty according to AFI 48-123, *Medical Examination and Standards*.

10.1.1.4.4. For entry, award, and retention of this AFSC, Qualification for aviation service according to AFI 11-402, *Aviation and Parachutist Service, Aeronautical Ratings and Badges*.

10.1.1.4.5. Completion of SERE Training Course (S-V80) and Water survival Training Course (S-V86 or S-V90) is mandatory for all 1A1X1 personnel.

10.1.1.4.6. Must maintain eligibility to deploy and mobilize worldwide.

10.1.1.4.7. Specialty requires routine access to Secret material or similar environment. For award and retention of AFSCs 1A131/51/71/91/00, a current National Agency Check, Local Agency Checks and Credit (NACLC) according to AFI 31-501, *Personnel Security Program Management*.

NOTE: Award of the 3-skill level without a completed NACLC is authorized provided an interim Secret security clearance has been granted according to AFI 31-501.

10.1.2. **Training Sources.** Completion of Aircrew Fundamentals Course (if pipeline or non-aviation, prior-service) and the Basic Flight Engineer course at Lackland AFB, TX satisfies the knowledge and training requirements specified in the specialty qualification section (above) for award of the 3-skill level.

10.1.3. **Implementation**. Entry into training is accomplished by approved retraining from any designated feeder AFSCs. After graduation from the BFE Course, IQT starts when an individual is assigned to their first duty position. Thereafter, upgrade training is initiated anytime an individual is assigned duties they are not qualified to perform.

10.2. Journeyman Level Training:

10.2.1. **Specialty Qualification.**

10.2.1.1. **Knowledge.** In addition to knowledge required for the 3-level and other qualifications as listed above, an individual must possess the knowledge of: electrical, communications, navigation, mechanical, hydraulic, and pneumatic systems applying to aircraft and related systems; flight theory; minor in-flight maintenance; personal equipment and oxygen use; aircraft emergency procedures; and using and interpreting diagrams, schematics, aircraft performance charts, loading charts, technical publications, and flight manuals. Completion of qualification criteria in current assigned aircraft is mandatory.

10.2.1.2. **Education.** No additional requirements for entry into this skill level.

10.2.1.3. **Training.** Completion of Aircrew Fundamentals CDC and completion of 1A151 CDCs, 15 months in UGT (9 months in UGT for retrainees) and recommendation by their supervisor is mandatory for award of the journeyman AFSC.

10.2.1.3.1. Completion of the resident and informal training for the assigned weapon system.

10.2.1.4. **Experience.** Qualification in and possession of AFSC 1A131. Also, experience is mandatory in functions such as aircraft and performance, weight and balance computations, aircraft records maintenance, and aircraft systems maintenance and inspections.

10.2.1.5. **Other.** See paragraph 10.1.1.4

10.2.2. **Training Sources.** Completion of the Aircrew Fundamentals CDC and 1A151 CDC, Flight Engineer Specialty Journeyman, satisfies the knowledge and training requirements specified in the specialty qualification section (above) for award of the 5-skill level. Upgrade and qualification training are provided by qualified trainers using current Air Force Instructions for the duty position, program to be managed, or equipment to be used. Current training courses are listed in Part II, Section D of this CFETP.

10.2.3. **Implementation.** Entry into journeyman upgrade is accomplished after the individual completes initial qualification training at their first duty location.

10.3. Craftsman Level Training:

10.3.1. **Specialty Qualification**.

10.3.1.1. **Knowledge.** In addition to knowledge required for the 5-skill level and other qualifications as listed above and individual must posses the knowledge and skills necessary to supervise personnel.

10.3.1.2. **Education.** To assume the grades of SSgt and MSgt, individuals must be graduates of the Airman Leadership School (ALS) and the NCO Academy, respectively.

10.3.1.3. **Training.** Be at least a Staff Sergeant (SSgt), completion of the Aircrew Fundamentals CDC (when activated) and the 1A151 CDCs (or holds a 5-skill level in the AFSC), 12 months in UGT (6 months for retrainees) and recommendation by their supervisor is mandatory for award of the craftsman AFSC. The CSAF has approved a variance eliminating the requirement for in-residence, 7-skill level, training for all 1AXXX (Air Operations career field personnel). However, minimum rank of SSgt and 12 months OJT still apply.

10.3.1.4. **Experience.** Qualification in and possession of AFSC 1A151. Also, experience is mandatory in performing or supervising functions such as flight engineer activities.

10.3.1.5. **Other.** See paragraph 10.1.1.4.

10.3.2. **Training Sources.** The STS identifies all tasks required for qualification. Upgrade and qualification training are provided by qualified trainers using current Air Force Instructions for the duty position, program to be managed, or equipment to be used. Current training courses are listed in Part II, Section D of this CFETP.

10.3.3. **Implementation.** Entry into 7-level upgrade is effective 1 Sep each year if an individual is selected for promotion to E-5. The only exception is STEP.

10.4. Superintendent Level Training:

10.4.1. **Specialty Qualification.**

10.4.1.1. **Knowledge.** In addition to knowledge required for the 7-skill level qualification, an individual must possess advanced skills and knowledge of concepts and principles in the effective management of Flight Engineer systems and personnel.

10.4.1.2. **Education.** Completion of CCAF degree is highly encouraged and is the AF standard.

10.4.1.3. **Training**. Must hold the rank of Senior Master Sergeant (SMSgt) and have supervisor's recommendation for award of the 9-skill level (active duty only).

10.4.1.4. **Experience.** Qualification in and possession of AFSC 1A171. Also, experience managing flight engineer functions and activities.

10.4.1.5. **Other.** See paragraph 10.1.1.4.

10.4.2. **Training Sources**. USAF Senior NCO Academy (or sister service equivalent).

10.4.3. **Implementation**. Individual attains the rank of SMSgt, possesses the 7-skill level. Qualification training is initiated anytime an individual is assigned duties they are not qualified to perform. All QTPs will be completed to be awarded the 9-skill level.

Section D - Resource Constraints

11. Purpose. This section identifies known resource constraints that preclude optimal/desired training from being developed or conducted, including information such as cost and manpower. Narrative explanations of each resource constraint and an impact statement describing what effect each constraint has on training are included. Also included in this section are actions required, office of primary responsibility, and target completion dates. Resource constraints will be reviewed and updated at least annually.

12. Apprentice Level Training. None identified.

13. Journeyman Level Training. None identified.

14. Craftsman Level. None identified.

PART II

Section A - Specialty Training Standard (STS)

1. Implementation. This STS will be used for technical training provided by AETC for classes beginning January 2008.

2. Purpose. As prescribed in AFI 36-2201 this STS:

2.1. Lists in column 1 of attachment 2, the tasks, knowledge, and technical references (TR) necessary for airmen to perform in the 3- and 5-skill level AFSC in the Flight Engineer ladder of the Aircrew Operations Career Field.

2.2. Lists in Column 2 shows the proficiency to be demonstrated on the job by the graduate as a result of training BFE Course as described in Education and Training Course Announcements (ETCA) at web site https://etca.randolph.af.mil/ and the career knowledge provided by the correspondence course. There is no advanced course. See AFIADL/AFSC/CDC listing maintained by the unit OJT manager for current CDC listings.

2.3. **Qualitative Requirements.** Attachment 1 contains the proficiency code key used to indicate the level of training and knowledge provided by resident training and career development courses.

2.4. Is a guide for development of promotion tests used in the Weighted Airmen Promotion System (WAPS). Specialty Knowledge Tests (SKTs) are developed at the AF Occupational Measurement Squadron (AFOMS) by senior NCOs with extensive practical experience in their career fields. The tests sample knowledge of STS subject matter areas judged by test development team members to be most appropriate for promotion to higher grades. Questions are based on study references listed in the WAPS study catalog. Individual responsibilities are in AFI 36-2605.

3. **Recommendations**. Report unsatisfactory performance of individual course graduates to 344 TRS, 950 Vouger Dr Suite 1, Bldg 147, Lackland AFB TX 78236-5724. Reference specific STS paragraphs

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

CARROL H. CHANDLER, Lt Gen, USAF
DCS, Operations, Plans & Requirements

2 Attachments:

1. Qualitative Requirements
2. STS: Flight Engineer (1A1X1)

THIS BLOCK FOR IDENTIFICATION PURPOSES ONLY		
NAME OF TRAINEE		
PRINTED NAME *(Last, First Middle Initial)*	INITIALS *(Written)*	SSAN
PRINTED NAME OF CERTIFYING OFFICIAL AND WRITTEN INITIALS		
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	

QUALITATIVE REQUIREMENTS

PROFICIENCY CODE KEY		
	SCALE VALUE	DEFINITION: The Individual
TASK PERFORMANCE LEVELS	1	Can do simple parts of the task. Needs to be told or shown how to do most of the task. (EXTREMELY LIMITED)
	2	Can do most parts of the task. Needs help only on hardest parts. (PARTIALLY PROFICIENT)
	3	Can do all parts of the task. Needs only a spot check of completed work. (COMPETENT)
	4	Can do the complete task quickly and accurately. Can tell or show others how to do the task. (HIGHLY PROFICIENT)
**TASK KNOWLEDGE LEVELS	a	Can name parts, tools, and simple facts about the task. (NOMENCLATURE)
	b	Can determine step by step procedures for doing the task. (PROCEDURES)
	c	Can identify why and when the task must be done and why each step is needed. (OPERATING PRINCIPLES)
	d	Can predict, isolate, and resolve problems about the task. (ADVANCED THEORY)
***SUBJECT KNOWLEDGE LEVELS	A	Can identify basic facts and terms about the subject. (FACTS)
	B	Can identify relationship of basic facts and state general principles about the subject. (PRINCIPLES)
	C	Can analyze facts and principles and draw conclusions about the subject. (ANALYSIS)
	D	Can evaluate conditions and make proper decisions about the subject. (EVALUATION)

EXPLANATIONS

**	A task knowledge scale value may be used alone or with a task performance scale value to define a level of knowledge for a specific task. (Examples: b and 1b)
***	A subject knowledge scale value is used alone to define a level of knowledge for a subject not directly related to any specific task, or for a subject common to several tasks.
-	This mark is used alone instead of a scale value to show that no proficiency training is provided in the course or CDC.
x	This mark is used alone in course columns to show that training is required but not given due to limitations in resources.
@	This mark is used to show that training is conducted by Aerospace Physiology during Aircrew Fundamentals.
@@	This mark is used to show the five general education requirements by CLEP/DANTES (pass or fail) towards CCAF degree.

Attachment 1

1.	2.			
	Proficiency codes are used to indicate training /information provided			
TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	**A 3-Skill Level**		**B 5-Skill Level**	
	Aircrew Fundamentals	**AFSC Technical Principles**	**Aircrew Fundamentals CDC**	**AFSC Technical Principles CDC**
1. Career Ladder Progression TR: AFI 36-2101, AFI 36-2104, AFI 11-401				
1.1. Progression within 1AXXX AFSC's	A	-	B	-
1.2. Duties within 1AXXX AFSC's	A	-	B	-
1.2.1. Duties within 1A1XX AFSC	-	-	-	B
1.3. Total Force	A	-	B	-
1.3.1. MAJCOM Missions	A	-	B	-
1.4. Joint/Combined Service	A	-	B	-
2. SECURITY TR: DODR 5200.1, AFI 10-1101, 31-201v2, 33-208, 33-211, 31-401, 10-701				
2.1. COMSEC relating to aircrew	A	-	B	-
2.2. OPSEC relating to aircrew	A	-	B	-
2.3. Perform Anti-Hijacking / Anti-Terrorism procedures	1a	-	-	-
2.4. Information Security relating to aircrew	A	-	B	-
2.5. Physical Security relating to aircrew	A	-	B	-
2.5.1. Perform Flightline Security Procedures	1a	-	-	-
3. CREW RESOURCE MANAGEMENT (CRM) TR: AFI-11-290				
3.1. Fundamentals	A	-	B	-
3.1.1. Application of CRM	-	-	-	B
3.2. Communication				
3.2.1. Terms and definitions	B	-	-	-
3.2.2. Radio Discipline	A	-	-	-
4. AVIATION SAFETY / AF OCCUPATIONAL SAFETY AND HEALTH (AFOSH) PROGRAM TR: AFI 91-201, 91-202, 91-301, 91-302, 91-303, 123-1, 24-204, AFOSH Std 91-25, 91-66, 91-100, AFPAM 91-121				
4.1. Aviator Hazards				
4.1.1. Engine air intake and exhaust	A	-	B	-
4.1.1.1. Apply appropriate safety measures	1a	-	-	-
4.1.2. High intensity sound	A	-	B	-
4.1.2.1. Apply appropriate safety measures	1a	-	-	-
4.1.3. Rotor/propeller planes of rotation	A	-	B	-
4.1.3.1. Apply appropriate safety measures	1a	-	-	-

1.	2.			
	Proficiency codes are used to indicate training /information provided			
TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	**A 3-Skill Level**		**B 5-Skill Level**	
	Aircrew Fundamentals	**AFSC Technical Principles**	**Aircrew Fundamentals CDC**	**AFSC Technical Principles CDC**
4.1.4. Antenna radiation	A	-	B	-
4.1.4.1. Apply appropriate safety measures	1a	-	-	-
4.1.5. Aircraft electrical system	A	-	-	-
4.1.5.1. Apply appropriate safety measures	1a	-	-	-
4.1.6. Ground support equipment	A	-	B	-
4.1.6.1. Apply appropriate safety measures	1a	-	-	-
4.2. Weather	A	-	-	-
4.3. Bird Avoidance Strike Hazard (BASH) Program	A	-	B	-
4.4. Hazardous Materials (HAZMAT)	A	-	B	-
4.5. Foreign Object Damage (FOD) Hazards/Prevention	A	-	B	-
4.6. High intensity light (strobes)	A	-	B	-
5. PUBLICATIONS TR: AFI 11-215, 33-360, 37-160v1, T.O. 00-20, 00-5-1/2, DODR 4500-32v1, 11-202v2				
5.1. Air Force Technical Orders	B	-	B	-
5.1.1. Use T.O.s	2b	-	-	-
5.1.2. Post changes	2b	-	-	-
5.2. Publications	B	-	B	-
5.2.1. Use publications	2b	-	-	-
5.2.2. Post changes	2b	-	-	-
5.3. Flight Publication Improvement Reports	B	-	B	-
5.3.1. Complete flight publication improvement report (AF Form 847)	2b	-	-	-
5.4. AFTO IMT 781 series	B	-	B	-
5.4.1. Use AFTO IMT 781A	1a	2b	-	-
5.5. Flight Crew Information File (FCIF)	B	-	B	-
5.5.1. Use Flight Crew Information File (FCIF)	2b	-	-	-
6. AIRCREW/FLIGHT MANAGEMENT TR: AFPD 11-4, AFI 11-401, 11-402, 11-412, 11-202v1/2/3, 38-201, 48-123v3				
6.1. Responsibilities of HQ USAF and MAJCOM Aircrew Managers	-	-	A	-
6.2. Flight authorization	A	-	A	-
6.3. Aviation Resource Management (ARM)				
6.3.1. Host Aviation Resource Management (HARM)	A	-	A	-
6.3.2. Squadron Aviation Resource Management (SARM)	A	-	A	-
6.4. Flight Records Folder (FRF)	A	-	A	-

1.	2.			
	Proficiency codes are used to indicate training /information provided			
TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	**A 3-Skill Level**		**B 5-Skill Level**	
	Aircrew Fundamentals	**AFSC Technical Principles**	**Aircrew Fundamentals CDC**	**AFSC Technical Principles CDC**
6.5. Aviation service, aeronautical ratings, badges	A	-	B	-
6.6 Flight pay / Career Enlisted Flight Incentive Pay (CEFIP) / Gates	B	-	B	-
6.7. Flight medicine				
6.7.1. Flight surgeon functions	B	-	B	-
6.7.2. Grounding / Duties Not Including Flying (DNIF) Status	B	-	B	-
6.8. Aircrew member responsibilities				
6.8.1. Crew rest	A	-	B	-
6.8.2. Restrictions	A	-	B	-
7. AIRCREW TRAINING/SUPERVISION TR: AFI 36-2201, 11-2MDS V1, 11-202v1/2, 36-2101, Education & Training Course Announcements (ETCA)				
7.1. Physiological Training	@	-	-	-
7.2. General education requirements	@@	-	-	-
7.3. Initial qualification training	A	-	B	-
7.4. Mission qualification training	A	-	B	-
7.5. Continuation training/Maintaining Currency	A	-	B	-
7.6. Requalification training	A	-	-	-
7.7. Flight Training Records	A	-	B	-
7.8. Standardization/Evaluation Functions	A	-	B	-
7.9. Flight Evaluation Folder (FEF)	A	-	B	-
7.10. Life support equipment	A	-	-	-
8. AERODYNAMICS TR: Aircraft -1 T.O., AFH 11-203v1, T.O. 1-1B-50				
8.1. Fixed wing	A	B	-	B
8.2. Rotary wing	A	B	-	B
8.2.1 Tilt Rotor	-	A	-	-
8.3. Aircraft general (Basic Construction)	A	-	-	-
8.4. Flight controls	A	-	-	-
8.5. Instruments	A	-	-	-
8.6. Aircraft Weight and Balance				
8.6.1. Principles	A	B	-	-
8.6.2. Apply weight and balance concepts	1a	-	-	-
8.6.3. Solve weight and balance math problems	1a	-	-	-
9. AIRCREW ACTIVITIES TR: -1 T.O., -9 T.O, AFI 11-202, 10-707				

1.	2.			
	Proficiency codes are used to indicate training /information provided			
TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	**A 3-Skill Level**		**B 5-Skill Level**	
	Aircrew Fundamentals	**AFSC Technical Principles**	**Aircrew Fundamentals CDC**	**AFSC Technical Principles CDC**
9.1. Mission briefings	A	-	-	-
9.1.1 Mission Planning Documents	A	-	-	-
9.2. Professional Equipment	A	-	A	-
9.3. Perform egress procedures	1a	-	-	-
9.4. Identify aircraft emergency equipment	1a	-	-	-
9.5. Oxygen Requirements	A	-	A	-
9.6. Joint Spectrum Interference Resolution (JSIR) / Air Force Spectrum Interference Resolution (AFSIR)	A	–	B	–
9.7. Map Interpretation				
9.7.1. Determine Latitude/Longitude	-	2b	-	-
9.7.2. Determine Military Grid Reference System (MGRS)	-	2b	-	-
9.7.3. Symbology	-	B	-	-
10. AIRCRAFT SYSTEMS/EQUIPMENT TR: Aircraft -1 T.O., MAJCOM guidance, and TO 00-25-172				
10.1. Electrical	A	-	-	-
10.1.1. Principles of Operation	-	A	-	-
10.1.2. System Components	-	A	-	-
10.2. Hydraulic	A	-	-	-
10.2.1. Principles of Operation	-	A	-	-
10.2.2. System Components	-	A	-	-
10.3. Environmental	A	-	-	-
10.3.1. Bleed air systems				
10.3.1.1. Principles of Operation	-	A	-	-
10.3.1.2. System Components	-	A	-	-
10.3.2. Air conditioning systems				
10.3.2.1. Principles of Operation	-	A	-	-
10.3.2.2. System Components	-	A	-	-
10.3.3. Pressurization systems				
10.3.3.1. Principles of Operation	-	A	-	-
10.3.3.2. System Components	-	A	-	-
10.4. Communications	A	-	-	-
10.4.1. Principles of Operation	-	A	-	-
10.4.2. System Components	-	A	-	-
10.5. Oxygen	A	-	-	-
10.6. Fuel	A	-	-	-
10.6.1. Principles of Operation	-	A	-	-

1.	2.			
	Proficiency codes are used to indicate training /information provided			
TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	**A 3-Skill Level**		**B 5-Skill Level**	
	Aircrew Fundamentals	**AFSC Technical Principles**	**Aircrew Fundamentals CDC**	**AFSC Technical Principles CDC**
10.6.2. System Components	-	A	-	-
10.7. Concurrent servicing	A	-	-	-
10.8. Fleet Service Equipment	A	-	-	-
10.9. Engines	A	-	-	-
10.9.1. Principles of Operation	-	A	-	-
10.9.2. System Components	-	A	-	-
10.10.. Navigation Lighting	A			
10.11. Flight Controls				
10.11.1. Principles of Operation	-	A	-	-
10.11.2. System Components	-	A	-	-
10.12. Instruments				
10.12.1. Principles of Operation	-	A	-	-
10.12.2. System Components	-	A	-	-
10.13. Landing gear systems				
10.13.1. Principles of Operation	-	A	-	-
10.13.2. System Components	-	A	-	-
10.14. Brake systems				
10.14.1. Principles of Operation	-	A	-	-
10.14.2. System Components	-	A	-	-
10.15. Cargo loading and unloading systems				
10.15.1. Cargo tie-down limitations	-	A	-	-
10.15.2. Cargo load and unload	-	1a	-	-
10.15.3. Use cargo restraining devices	-	1a	-	-
10.15.4. Passenger loading	-	A	-	-
10.15.5. Litter loading	-	A	-	-
10.16. Propeller components				
10.16.1. Principles of Operation	-	A	-	-
10.16.2. System Components	-	A	-	-
10.17. Rotor components				
10.17.1. Principles of Operation	-	A	-	-
10.17.2. System Components	-	A	-	-
10.18. Prop Rotor components	-	A	-	-
10.18.1. Principles of Operation	-	A	-	-
10.18.2. System Components	-	A	-	-
10.19. Transmission and drive components				
10.19.1. Principles of Operation	-	A	-	-

1.	2.			
	Proficiency codes are used to indicate training /information provided			
TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	**A 3-Skill Level**		**B 5-Skill Level**	
	Aircrew Fundamentals	**AFSC Technical Principles**	**Aircrew Fundamentals CDC**	**AFSC Technical Principles CDC**
10.19.2. System Components	-	A	-	-
10.20. Fire detection systems				
10.20.1. Principles of Operation	-	A	-	-
10.20.2. System Components	-	A	-	-
10.21. Fire extinguishing systems				
10.21.1. Principles of Operation	-	A	-	-
10.21.2. System Components	-	A	-	-
10.22. Auxiliary power systems				
10.22.1. Principles of Operation	-	A	-	-
10.22.2. System Components	-	A	-	-
10.23. Sensors				
10.23.1. Principles of Operation	-	A	-	-
10.23.2. System Components	-	A	-	-
11. ALTERNATE INSERTION/EXTRACTION (AIE) OPERATIONS TR: Applicable MAJCOM Instructions				
11.1. AIE Equipment				
11.1.1. Principles of Operation	-	A	-	-
11.1.2. System Components	-	A	-	-
11.1.3. Inspection	-	A	-	-
12. AIRCREW SCANNING DUTIES TR: Applicable 11- Series AFIs				
12.1. Area of Responsibility	-	A	-	-
12.2. Brevity Codes	-	A	-	-
13. AIRCRAFT WEAPONS, COUNTERMEASURES, AND PYROTECHNICS TR: AFMAN 91-201, T.O.s 11A10, 11A Series, 11W Series, 33 Series, 34 Series; Applicable -1 T.O.				
13.1. Aircraft Weapon Systems				
13.1.1. Principles of Operation	-	A	-	-
13.1.2. System Components	-	A	-	-
13.2. Defensive Systems ECM/IRCM)				
13.2.1. Principles of Operation	-	A	-	-
13.2.2. System Components	-	A	-	-

1.	2.			
	Proficiency codes are used to indicate training /information provided			
TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	**A 3-Skill Level**		**B 5-Skill Level**	
	Aircrew Fundamentals	**AFSC Technical Principles**	**Aircrew Fundamentals CDC**	**AFSC Technical Principles CDC**
14. AIRCRAFT PERFORMANCE TR: Aircraft -1 TOs, MAJCOM Instructions, AFH 11-203 Vol. 1, TO 1-1B-50				
14.1. Principles of:				
14.1.1. Basic Atmospherics/Physics	-	B	-	B
14.1.2. Weather Systems	-	-	-	B
14.1.2.1. Weather Report Interpretation	-	B	-	B
14.1.3. Turbofan/Jet Propulsion	-	B	-	-
14.1.4. Turboprop Propulsion	-	B	-	-
14.2. Aircraft Performance				
14.2.1. Solve Performance Math Problems	-	2b	-	-
14.2.2. Utilize Performance Charts, Tables and Tabulated Data	-	2b	-	-
14.2.3. Plan Performance/Identify Unsafe Conditions for Each Phase of Flight (Fixed/Rotor/Tilt rotor):				
14.2.3.1. Takeoff	-	2b	-	-
14.2.3.2. Emergency Return	-	2b	-	-
14.2.3.3. Climb	-	2b	-	-
14.2.3.4. Cruise	-	2b	-	-
14.2.3.5. Holding/Orbiting/Loiter	-	2b	-	-
14.2.3.6. Descent	-	2b	-	-
14.2.3.7. Landing	-	2b	-	-
14.3. Determine Fuel Required for the Mission	-	2b	-	-
14.4. Complete DD Form 365-4 Using Weight and Balance Charts/Tables	-	2b	-	b
14.5. Complete Aircraft Performance Documentation				
14.5.1. Performance Form/Logs	-	2b	-	-
14.5.2. Performance Planning Worksheets	-	2b	-	-
15. AIRCREW INSPECTIONS TR: Aircraft -1 TOs, TO 1-1-300, and MAJCOM Instructions				
15.1. Functional Check Flight (FCF)	-	-	-	B

1.	2.			
	Proficiency codes are used to indicate training /information provided			
TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	**A 3-Skill Level**		**B 5-Skill Level**	
	Aircrew Fundamentals	**AFSC Technical Principles**	**Aircrew Fundamentals CDC**	**AFSC Technical Principles CDC**
15.2. Acceptance Check Flight (ACF)	-	-	-	B
15.3. Operational Check Flight (OCF)	-	-	-	B
16. GENERAL NAVIGATION TR: AFMAN 11-217 V1 & 2, AFI 11-208(I), AFPAM 11-216				
16.1. Apply Fundamentals of Chart Reading Using:				
16.1.1. SIDS/TCN/FLIPS/NOTAMS	-	2b	-	b
16.1.2. Approach Plates/Stars	-	2b	-	b
16.1.3. Enroute/Terminal Charts	-	2b	-	b
16.2. NAVAID Interpretation and Principles	-	2b	-	b
16.3. Approach and Departure Monitoring	-	2b	-	b
16.4. Position Orientation	-	2b	-	b
17. MISSION PLANNING AND COMPUTATIONS TR: AFMAN 11-217 V1 & 2, and Applicable -1 T.O.s				
17.1. Perform Pre-Mission Planning	-	2b	-	-
17.1.1. Principles of Fuel Management	-	B	-	-
17.1.2. Compute Fuel Management Procedures	-	2b	-	-

Attachment 2

Section B - Course Objective List

4. Measurement. Each objective is indicated as follows: **W** indicates task or subject knowledge which is measured using a written test, **PC** indicates required task performance which is measured with a performance progress check, and **PC/W** indicates separate measurement of both knowledge and performance elements using a written test and a performance progress check. **P** indicates performance test only.

5. Standard. The standard is 85% on written examinations. Standards for performance measurement are indicated in the objective and delineated on the individual progress checklist. Instructor assistance is provided as needed during the progress check, and students may be required to repeat all or part of the behavior until satisfactory performance is attained.

6. Proficiency Level. Most task performance is taught to the "1a" proficiency level which means the students can do simple parts of the task, but needs to be told or shown how to do most of the task (extremely limited) or to a "2b" proficiency level which means the students can do most parts of the task, but does need assistance on the hardest parts of the task (partially proficient). The student can also determine step-by-step procedures for doing the task.

Section C - Support Material

8. The following list of support materials is not all-inclusive; however, it covers the most frequently referenced areas.

NOTE: This area is reserved.

Section D - Training Course Index

9. **Purpose.** This section of the CFETP identifies training courses available for the specialty and shows how the courses are used by each MAJCOM in their career field training programs.

10. Air Force In-Residence Courses.

COURSE NUMBER	COURSE TITLE	LOCATION
L3AQR1A311 01AB	Aircrew Fundamentals Course	Lackland AFB, TX
L3ABR1A331 048	Basic Flight Engineer Course	Lackland AFB, TX
S-V80-A	Combat Survival Training	Fairchild AFB, WA
S-V83-A	Special Survival	Fairchild AFB, WA
S-V84-A	Underwater Egress Training	Fairchild AFB, WA
S-V86-A	Water Survival Training (Parachuting)	Pensacola NAS, FL
S-V90-A	Water Survival Training (Non-Parachuting)	Fairchild AFB, WA
ANGBFE	Basic Flight Engineer	Little Rock AFB, AR
E3BQFE	E3 Flight Engineer Initial Qualification Training Course	Tinker AFB, OK
E4B00MQEFO-001	E4B Flight Engineer	Offutt AFB, NE
E8FE-QT	E-8 Flight Engineer - Qualification Training	Robins AFB, GA
E8FE-TX	E-8 Flight Engineer - Transition Training	Robins AFB, GA
EC-130EH FETX	EC-130H Flight Engineer Transition Course	Davis-Monthan AFB, MT
C130EFIQ1LP	C-130 Flight Engineer Initial Qualification	Little Rock AFB, AR
C130HFMQ3R9	C-130 Flight Engineer Initial/Mission Qualification	Dobbins AFB, GA
UH1N-FE-MQ	UH-1N Mission Flight Engineer Initial Qualification	Kirtland AFB, NM
C5FIQ	C-5 Flight Engineer Initial Qualification	Lackland AFB, TX
HH60G-FE-MQ	HH-60G Mission Flight Engineer Initial Qualification	Kirtland AFB, NM
CV22-MF-IQ	CV22 Mission Flight Engineer Initial Qualification	Kirtland AFB, NM

HC130P/N-MF-IQ	HC-130P/N Mission Flight Engineer Initial Qualification	Kirtland AFB, NM
AC130HFE	Flight Engineer Gunship Initial Mission Qualification	Hurlburt Field, FL
AC130UFE	Flight Engineer Initial Mission Qualification	Hurlburt Field, FL
MC130EFE	Flight Engineer Initial Mission Qualification	Hurlburt Field, FL
MC130W-MF-IQ	Mission Flight Engineer Initial Qualification	Hurlburt Field, FL
C37A FIQ	C-37A (G-5) Flight Engineer Initial Qualification	Andrews AFB, MD
KC10 FIQ	KC-10 Flight Engineer Initial Qualification	McGuire AFB, NJ Travis AFB, CA

11. Air Force Institute for Advanced Distributed Learning (AFIADL) Courses.

COURSE NUMBER	COURSE TITLE
CDC 1AX5X	Aircrew Fundamentals
CDC 1A151	Flight Engineer Journeyman

Section E - MAJCOM Unique Requirements

The following list of MAJCOM unique requirements is not all-inclusive; however, it covers the most frequently referenced areas.

12. Air Combat Command Courses.

13. Air Education and Training Command Courses.

14. Air Force Special Operations Command Courses.

15. Air Mobility Command Courses.